

**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE NATIONAL CANCER INSTITUTE, NATIONAL INSTITUTES OF HEALTH
AND
THE SHANGHAI CENTER FOR BIOINFORMATION TECHNOLOGY,
SHANGHAI BIOTECHNOLOGY CORPORATION**

The National Cancer Institute, a component of the National Institutes of Health within the United States Department of Health and Human Services, and the Shanghai Center for Bioinformation Technology, Shanghai Biotechnology Corporation, a government-funded institution (each a "Participant" and collectively, the "Participants"), which both work to improve the national health and welfare of their people through the reduction of incidence and mortality of cancer through research, patient care, and national cancer control programs;

Desiring to strengthen and develop research cooperation in their mutual interest;

Noting the Agreement between the Government of the United States of America and the Government of the People's Republic of China on Cooperation in Science and Technology signed on January 31, 1979, as amended and extended intend through this Memorandum of Understanding (the "Memorandum") to develop new cooperative activities in the area of cancer biomarkers and early cancer detection. The purposes of the cooperative activities may include, but are not limited to, the discovery, development and validation of biomarkers for risk assessment and early detection of cancer, the conduct of correlative studies and trials to validate biomarkers as indicators of risk, early cancer, or pre-invasive cancer, and the development of quality assurance programs for biomarker testing and evaluation.

Section I

Cooperative activities under this Memorandum may include, but are not limited to:

- Collaborative basic and translational biomedical research projects;
- Analysis of tumors found in the U.S. and/or Chinese populations;
- Publishing scientific findings; and
- Other forms of cooperation identified jointly, subject to the availability of resources.

Each Participant intends to be responsible for all of its own costs, including personnel and travel costs, for any cooperative activities under this Memorandum.

Section II

The Participants may mutually decide to involve additional cooperating entities to participate in activities contemplated by this Memorandum. Such additional cooperating entities may include: government agencies, individuals, and institutions in the public, private, and academic sectors; state and local governments in both countries; experts from other countries; international organizations; and non-governmental organizations. Specific roles, responsibilities, and oversight of these additional cooperating entities contributing to activities contemplated by this Memorandum should be outlined in subsequent arrangements.

Section III

Each Participant acknowledges the importance of the protection of human and animal subjects in any research, public health or medical program. Each Participant has adopted laws, regulations and policies for the protection of human and animal subjects involved in research. Each Participant intends to perform its respective activities, and should expect all additional cooperating entities to perform activities contemplated by this Memorandum, in accordance with applicable laws, regulations and policies.

Section IV

This Memorandum does not constitute an international agreement and does not create any binding obligations. The Participants intend that this Memorandum does not constitute an obligation or commitment of either Participant as to the expenditure of funds. All cooperative activities under this Memorandum are subject to the availability of personnel, appropriated funds and other resources. Any differences of opinion relating to activities conducted under this Memorandum are intended to be resolved through discussions between the Participants.

Section V

The Participants recognize that activities under this Memorandum may involve reciprocal visits of administrative and scientific personnel and materials between the United States and China. The Participants intend to use their best efforts to facilitate the rapid completion of all necessary clearances and documentation required to allow and encourage the international movement of research material equipment and supplies, subject to all applicable laws and regulations.

Section VI

Activities under this Memorandum may commence on the date of the last signature below. This Memorandum may remain in effect for five years from the date of last signature. This Memorandum may be discontinued at any time by either Participant, which discontinuing Participant should endeavor to provide 90 days' written notice to the other Participant. In the case of discontinuation, cooperation already underway or approved under this Memorandum may continue until completion.

SIGNATURES APPEAR ON THE NEXT PAGE

**FOR THE NATIONAL CANCER
INSTITUTE**



Harold Varmus, M.D.
Director, National Cancer Institute

4/20/14
Date

**FOR THE SHANGHAI CENTER FOR
BIOINFORMATION TECHNOLOGY**



Dr. Yixue Li
Director, Shanghai Center for
Bioinformation Technology
Vice Director, Key Laboratory of Systems
Biology at Shanghai Institutes for Biological
Sciences, Chinese Academy of Sciences

6/5/14

Date



Dr. Guoping Zhao
Executive Director, Chinese National
Human Genome Center at Shanghai

6/5/14

Date